Psychological Trauma: Theory, Research, Practice, and Policy

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The Relationship Between Trauma and Forgiveness in Post-conflict Sierra Leone

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The decade-long civil war in Sierra Leone was declared over in 2002, but the psychological impact of the conflict remains. The purpose of this study was to determine if forgiveness is related to improved adjustment to trauma and for what demographic groups it is most useful in postwar Sierra Leone. Data were collected as part of the Association for Trauma Outreach and Prevention of Meaningfulworld's humanitarian outreach mission to Sierra Leone in March of 2009. Participants were administered a sociodemographic questionnaire that included gender, age, religion, education, and employment variables. Trauma exposure and posttraumatic symptomatology were assessed using Parts 1 and 3 of the Harvard Trauma Questionnaire. Forgiveness was assessed using the Enright Forgiveness Inventory, which provides scores for total forgiveness and subscores for forgiving affect, behavior, and cognition. The role of gender and age were examined, and several significant relationships between forgiveness and trauma emerged. Trauma exposure and traumatic stress were significantly correlated, although traumatic stress showed a stronger relationship to forgiveness variables. Salient differences emerged between men and women and among older and younger participants. The strongest relationship between traumatic stress and forgiveness emerged in older women.

Keywords: post-conflict Sierra Leone, trauma exposure, forgiveness, posttraumatic stress

The prevalence of trauma and its relationship to mental health outcomes have been well documented in the literature. Untreated traumatic stress can have a lasting impact and has been shown to underlie various forms of psychopathology (Kalayjian, Shahinian, Gergerian, & Saraydarian, 1996; Kessler, 2000; Shelby & Tredinnick, 1995). Trauma frequently results in disruptions of meaning-making systems (Carver, 1998; Frankl, 1962; Park & Ali, 2006) and loss of faith or a sense of autonomy, and severs the connection an individual feels to their community (van der Kolk, 1987). Common psychiatric outcomes include acute stress disorder, posttraumatic stress disorder (PTSD), and various forms of depressive and anxiety disorders (Deschenie, 2006; Kalayjian & Eugene, 2010a,b; Kessler, Sonnega, Bromet, & Hughes, 1995; Kulka, Schlenger, Fairbank, Jordan, & Marmar, 1990).

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The Conflict in Sierra Leone

Sociopolitical Features

Sierra Leone is a small but diverse country located on the West African coast, with the current population estimate at 5.7 million (U.S. Department of State, 2010). Sierra Leone is reportedly one of the poorest countries in the world and faces a variety of difficulties, among them a lack of available electricity and clean water, roads fit for transportation, infrastructure to support health care and education systems, and long-term malignant political unrest (Basu, 2008). The United Nations Human Development Index (HDI) is a composite statistic that uses data on life expectancy, education, and gross national income to rank countries according to how developed they are. In 2005 the HDI ranked Sierra Leone second to last in the world, placing them in the "low human development" category (United Nations Statistics Division, 2009).

Civil War

The civil war in Sierra Leone began in 1991 and was not declared over until 2002 (for a detailed review of the events, see the historical report by the U.S. Department of State, 2010). Although war is typically a traumatic event, the conflict in Sierra Leone was particularly devastating for its civilians. Gross human rights violations occurred on both sides of the conflict, with the Revolutionary United Front (RUF) particularly noted for their

brutal terroristic tactics. Adults and children were abducted and forced to join the RUF forces or face death (Maclure & Denov, 2006; Zack–Williams, 2006). Villages were frequently attacked, resulting in the destruction and burning of homes, schools, and health facilities. Civilians were raped and maimed, with body parts often severed. RUF forces engaged in cannibalism and ritual murder, with torture centers established throughout different regions of the country. By the end of the war, more than 10 thousand people had died and more than two million were displaced (U.S. Department of State, 2010).

Healing From Trauma

Pretraumatic Variables in Trauma Recovery

Several studies have identified variables that moderate the lasting impact of traumatic stress and the ability to heal from trauma, with sociodemographic characteristics shown to predict PTSD outcomes (Freedy, Saladin, Kilpatrick, Resnick, & Saunders, 1994; Park & Ali, 2006) and resilience (Bonanno & Mancini, 2008). Research suggests that across populations and types of trauma, females exhibit higher levels of PTSD and associated symptomatology as compared with men (Breslau, 2009; Brewin, Andrews, & Valentine, 2000; Furr, Comer, Edmunds, & Kendall, 2010; Tolin & Foa, 2006). A meta-analytic study found that females were also more likely to experience self-reported posttraumatic growth following exposure to trauma (Vishnevsky, Cann, Calhoun, Tedeschi, & Demakis, 2010). These gender differences are important within the context of Sierra Leone given the significant impact of the conflict on women. One study of mental health outcomes in a Sierra Leonean sample found that females reported increases in psychiatric symptomatology and worse functioning overall (Hess, 2009).

The impact of the Sierra Leonean civil war was particularly devastating to women, given the prevalence of rape and sexual violence that occurred during this time. Rape was used as a weapon against girls and women and frequently involved multiple perpetrators and extraneous brutality. Sexual violence was often a daily occurrence and consisted of gang rape, individual rape, and object rape. Rape events frequently occurred in public, sometimes while the victims' friends and family were forced to watch. Young girls were also forced to "marry" RUF rebels, serving as housewives or sexual slaves (McKay, 2005). Many females were also forced to fight and participate in committing atrocities against others (Denov & Gervais, 2007; McKay, 2005). Women who were raped had to cope with both "natural" effects of war and their own personal violation and victimization. The cumulative effect of multiple traumas likely intensifies the psychological impact for these women.

In a study on the psychological aftermath of war, being raped was predictive of higher levels of PTSD symptomatology and internalizing problems (Betancourt, Brennan, Rubin–Smith, Fitzmaurice, & Gilman, 2010). Given the stigma associated with sexual victimization in countries like Sierra Leone (Cockburn, 2001; Denov & Gervais, 2007), female victims are subject to isolation and ostracism, often becoming "silent victims." They are also prevented from receiving psychological care or participating in reconstruction programs, resulting in less overall recovery and more severe traumatic stress reactions (Cockburn, 2001).

Peritraumatic Variables in Trauma Recovery

Traumas may occur from either natural (environment, weather) or man-made (war, terrorism) causes. Although man-made traumas are not exclusively premeditated or intentional, there is usually an individual or group that can be blamed for the event. The psychological effects of man-made trauma may therefore include guilt, fear, blame, hatred (Kalayjian & Eugene, 2010b), humiliation (Lindner, 2009), or dehumanization (Bandura, 1990). Weaver and Congress (2010) note that human-made trauma is unique in the deliberate threat or injury from one person or group to another, which carries interpersonal implications and can erode feelings of safety and the ability to trust.

The severity of trauma and degree of exposure have been identified as variables that moderate the psychological impact of trauma and the likelihood of developing PTSD, with more severe and chronic trauma having a more devastating impact (Kalayjian, 2010a,b; Tucker, Pfefferbaum, Nixon, & Dickson, 2000; United States Department of Veterans Affairs, 2010). Past traumatization has been shown to increase the likelihood of developing PTSD in response to subsequent traumatic events (Breslau, Chilcoat, Kessler, & Davis, 1999). Prolonged exposure to trauma is also associated with increases in feelings of helplessness and hopelessness (Kalayjian, 1995, 2005).

Posttraumatic Variables in Trauma Recovery

Critical to recovery is the ability to find meaning in the traumatic event (Frankl, 1962; Kalayjian & Eugene, 2010a,b). Spirituality has been identified as one way of facilitating meaning-making postdisaster. Emphasis has been placed on incorporating spiritual practices and cultural rituals and traditions into the process of recovering from trauma in various populations (Benson, 1996; Hedva, 2009; Gordon, Staples, Blyta, & Bytygi, 2004), including Sierra Leone (Peddle, Stamm, Hudnall, & Stamm, 2006; Truth and Reconciliation Commission [TRC], 2004).

Forgiveness has also been identified as a way of coping with the effects of perpetrated, man-made trauma (Chapman, 2007; Kalayjian, 2010; Schaefer, Blazer, & Koenig, 2008; Staub, Pearlman, Gubin, & Hagengimana, 2005; Worthington, 2006), including in post-conflict societies (Swart, Turner, Hewstone, & Voci, 2011) and a Sierra Leonean population (Toussaint, Peddle, Cheadle, Sellu & Luskin, 2010). Forgiveness has been defined as the mental, emotional, or spiritual process of eliminating feelings of anger and resentment toward another person for their offenses, no longer desiring or demanding punishment or restitution (Hultman, 2007). Studies have demonstrated that forgiveness results in lower levels of posttraumatic stress and psychiatric morbidity (Friedberg, Adonis, von Bergen, & Suchday, 2005; Peddle, 2007; Stein et al., 2008). Failure to forgive one's perpetrators has also been shown to exacerbate psychological suffering (Worthington, 2006). Generally, forgiveness has been shown to be higher in women and older individuals (Miller, Worthington, & McDaniel, 2008; Toussaint, Williams, Musick, & Everson, 2001).

Present Study

Data for the study were collected as part of a humanitarian rehabilitation trip sponsored by the organization Meaningfulworld

(Meaningfulworld, 2010). The organization has provided global disaster response through the Association for Trauma Outreach and Prevention (ATOP) since 1989, training paraprofessional counselors and disseminating outreach teams to various sites around the world. Counselors undergo a series of trainings in the biopsychosocial and eco-spiritual model, a multiphasic holistic healing method designed to ameliorate the effects of acute and chronic traumatic stress (for a detailed review, see Kalayjian, 2002). The organization works closely with universities and other organizations to reach out to the community and offer counseling services and support, and anyone who wishes to share their story or participate in the program is permitted to do so. Research studies are often conducted in conjunction with these trips, though participating in data collection in no way impacts eligibility to receive clinical services.

The purpose of the present study was to document levels of exposure to trauma and posttraumatic stress symptomatology, and to understand the extent to which forgiveness might be an effective postconflict coping mechanism associated with less severe trauma reactions. Our review of the literature suggests that forgiveness should be associated with less exposure to trauma and less posttraumatic stress. Our review also makes clear that gender and age are important for both the experience of trauma and forgiveness. For this reason, we examined levels of trauma exposure and severity and levels of forgiveness across gender and age groups. We sought to explore the possibility that gender, age, or gender and age might influence the associations between forgiveness and trauma. Given that higher levels of forgiveness have been documented for older participants and women, we expected that forgiveness might have more robust connections to trauma in these groups as well.

Method

Participants

Sixty-three adult residents of Sierra Leone participated in the outreach program. There were two assessment periods—March 16, 2009 ($n = 46$) and March 24, 2009 ($n = 17$). Becasue the war was officially declared over in 2002, the time of measurement for the study can be considered long term, though ongoing unrest in the region makes it possible that for some participants exposure to trauma occurred past this date. In cases where participants did not agree to participate in the study or were missing more than 5% of data, responses were excluded from the analysis. The final sample for the study consisted of 53 participants. Of the 94% who self-reported their gender, there were slightly more male (56%) than female (44%) participants. The majority of participants were affiliated with universities, with 66% of the sample current university students and 34% currently employed, primarily in a university setting. The sample was well educated, with 96% of respondents enrolled in or graduated from a university. Ages ranged from 20 to 60 years old, with a median age of 27. Most participants were single (64%) or married (33%); a few were divorced (1.6%) or widowed (1.6%). Slightly less than half reported having at least one child (45%) and slightly more than half reported having no children (55%). The majority of respondents identified as Christian (70%). Several respondents (28%) identified as Muslim, with one participant (1.6%) indicating combined Christian/Islamic affiliation. Participants were primarily native residents of Sierra Leone, coming from many neighboring cities in the country.

Measures

Trauma exposure and posttraumatic stress. Trauma exposure and posttraumatic stress was assessed using the Harvard Trauma Questionnaire (HTQ; Mollica et al., 1992). Part 1, a 38-item Trauma Events scale designed to assess exposure to a variety of traumatic events, and Part 4, a 30-item Trauma Symptoms scale that assesses the presence and level of posttraumatic stress symptomatology, were used in the current study. Part 1 involves a yes/no response scale and yields a trauma exposure index. For part 4, each item is rated on a Likert-type scale of 0 to 3 with a summary score yielding an index of posttraumatic stress symptoms (a cut-off score of 2.5 or higher is used as an indicator of likely PTSD). Degree of exposure to trauma was calculated by using the overall summary score on Part 1 of the HTQ, and level of posttraumatic stress was assessed using the mean score of all items on Part 4. Reliability and validity of the HTQ has been demonstrated in a number of populations (Domanskaité–Gota, Elkit, & Christiansen, 2009; Lhewa, Banu, Rosenfeld, & Keller, 2007; Mollica et al., 1998; O'Connor, Lasgaard, Spindler, & Elklit, 2007; Fawzi et al., 1997). In the current study, internal consistency of both parts of the scale was high ($\alpha = .92$ and .90, respectively).

Forgiveness. Forgiveness was assessed using the Enright Forgiveness Inventory (EFI; Enright, Rique, & Coyle, 2000), which possesses excellent reliability and validity, and is currently the most widely used measure of forgiveness (Enright et al., 2000; Enright & Fitzgibbons, 2000; Subkoviak et al., 1995). The EFI is a 60-item scale that uses a 6-point Likert-type scale (ranging from *strongly agree* to *strongly disagree*). The items comprise three subscales. For the first subscale, "Affect," participants are asked to think about who hurt them and respond to questions about their current feelings toward that person. The second subscale, "Behavior," asks participants to respond to how they would act toward their perpetrator(s) in the present. The third subscale, "Cognition," assesses participants' thoughts about their perpetrators. Each of the three subscales of the EFI is comprised of 20 items and yields a separate score in addition to an overall composite score. The measure includes a single-item subjective forgiveness score. Concurrent validity analyses using the single-item forgiveness score showed positive and moderate correlations for affect ($r = .46$), behavior ($r = .36$), cognition ($r = .40$), and the total forgiveness score ($r = .46$). The EFI has been used in a wide variety of populations, with seven additional translated and validated versions (Allan, Allan, Kaminer, & Stein, 2006; Enright et al., 2000; Holeman & Myers, 1998; Kaminer, 2006; Toussaint & Webb, 2005). Although there is currently no version standardized on an African population, the EFI showed excellent internal consistency across all three subscales and the total score and appeared to be reliable for use in the current sample (all αs $\geq .91$).

Procedure

Data were collected as part of ATOP's humanitarian mission to Sierra Leone in March of 2009. Participants were recruited for the

outreach program through the ATOP's collaboration with Njala University campuses in both Bo and Freetown, Sierra Leone, and the nongovernmental organization Saving Lives Through Alternate Options. The team traveled to Freetown, Bo, Gobaru, and Pujehun to provide trauma counseling and psychological support. Recruitment for the study involved using participants who had chosen to enroll in the therapeutic program, and thus represented a convenience sample. The program was advertised through flyers around the university's campuses, and communication with the Dean, who agreed to circulate the information one month in advance. Team members did not engage in additional community outreach while in Sierra Leone due to ongoing instability in the region and safety concerns. As part of the two-day therapeutic workshop, participants were asked to fill out the measures utilized in this study and a brief 10-item demographic form. Data were collected prior to participating in the therapeutic program.

Statistical Analyses

Analyses proceeded in two phases. The first set of analyses used Pearson correlations and one-way analysis of variance (ANOVA) to describe gender and age differences in levels of forgiveness and trauma and to examine bivariate correlations. Given the relatively small sample size, especially when classifying by sociodemographic criteria, we chose to report data with an alpha of $p \leq .10$ as trend level. We chose to include trend-level data in order to balance the likelihood of committing a Type I versus Type II statistical error (Cohen, 1988).

To examine the effects of age, we created a categorical variable splitting respondents either age 29 and below or 30 and above, which roughly divided the sample in half. There were 35 respondents in the 20–29 age group, and 28 in the 30–60 age group. There were no significant differences among the 30–39, 40–49, and 50–60 groups on levels of traumatic stress or any of the forgiveness variables, which provided justification for collapsing these groups and using 30 as the cutoff.

The second phase of analysis involved testing a hierarchical regression model. We ordered the entry of variables into the model in the following fashion. In the first step, gender and age were entered. Unlike in our other analyses where age was categorized for ease of presentation, the regression model utilized age as a continuous predictor. In the second step, trauma exposure was entered. In the third step, forgiving affect, behavior, and cognition variables were entered. In the fourth step, two-way interaction terms were entered. In the fifth step, three-way interaction terms were entered. Using this modeling sequence allows for an examination of pretraumatic (age and gender) main effects, peritraumatic (exposure) main effects adjusted for pretraumatic variables, and posttraumatic coping (forgiveness) main effects adjusted for pre- and peri-traumatic variables. Steps 4 and 5 allow for an examination of important moderating effects of age and gender on the relationship between forgiveness and trauma.

There were seven two-way interactions and three three-way interaction terms, entered on Steps 4 and 5, respectively. Because of the high number of interaction terms and the relatively small sample size, we conducted a series of analyses (not shown) where Steps 1 and 2 were identical, but Steps 3, 4, and 5 included only the terms relevant for one of the forgiving affect, behavior, or cognition scales. This resulted in models with substantially fewer coefficients estimated (eight coefficients vs. sixteen). On the whole, these analyses were highly similar to the comprehensive and simultaneously estimated models presented in the results and Table 5. Hence, Models 4 and 5 contain a large number of variables, but there do not appear to be noticeable substantive differences as compared with much smaller models estimated sequentially instead of simultaneously. As a result, for parsimonious presentation we present the models where all interaction terms are modeled simultaneously. This strategy also allows us to consider potentially important differences between forgiving affect, behavior, and cognition, and yet control for multicollinearity among main effects and higher-order interaction terms.

Results

Descriptive Analyses

Levels of forgiveness, trauma exposure, and severity. Self-reported trauma is detailed in Figure 1. The types of trauma experienced or witnessed by participants in the current sample are

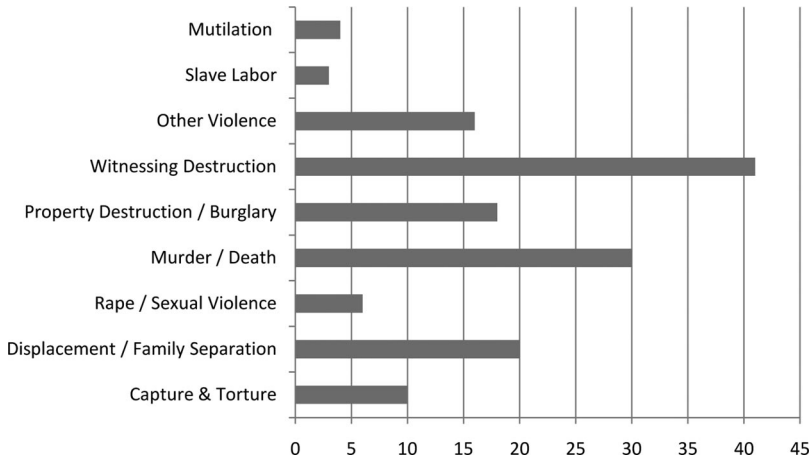

Figure 1. Frequency of different types of traumatic events experienced during the civil war.

representative of the types of trauma that were experienced by the Sierra Leonean population during the civil war, such as witnessing wartime destruction, witnessing public and private murder, being captured and tortured by rebel forces, being sexually victimized, property damage or burglary, or displacement or separation from family. Participants on average experienced 2.7 different types of trauma. Table 1 shows the Pearson correlations between forgiving affect, forgiving behavior, forgiving cognition, total forgiveness, trauma exposure, and current trauma symptom severity. Trauma exposure and symptom severity were positively correlated, and all forgiveness scores were positively correlated with each other. However, forgiveness and degree of trauma exposure appeared to be virtually independent of one another, so our first hypothesis was not supported.

Age and gender differences in forgiveness, trauma exposure, and posttraumatic stress. Our second research question pointed to the important influence of sociodemographic variables. We examined the effect of these variables on levels of trauma and forgiveness, as well as the relationship between trauma and forgiveness. Table 2 shows the means for trauma and forgiveness variables by gender and by age. Unexpectedly, trauma exposure and levels of posttraumatic stress did not differ by gender. Regarding age, trauma exposure was similar across younger and older participants, but as expected, younger respondents did report greater severity of symptoms. Older respondents reported higher levels of forgiving behavior and total forgiveness than younger respondents (see Table 2).

Table 3 shows the correlations between forgiving affect, forgiving behavior, forgiving cognition, and total forgiveness scores with trauma exposure and current trauma-symptom severity separately for men and women and younger and older participants. Again, there is no statistically significant correlation between forgiveness and trauma exposure for either men or women. However, for men alone there is an inverse relationship between forgiving behavior and forgiving cognition with current trauma-symptom severity that is statistically significant. Hence, associations between forgiveness and trauma differ for men and women, but the effect is the reverse of our expectation in that forgiveness is connected to trauma for men but not women. For older participants only, almost all subtypes of forgiveness show statistically significant, strong, inverse associations with current levels of trauma symptom severity. Again, no association with trauma exposure emerged.

Lastly, Table 4 details the associations between forgiving affect, forgiving behavior, forgiving cognition, and total forgiveness with trauma exposure and current trauma symptom-severity separately for younger men and women and older men and women participants. Perhaps the most interesting trend observable in this table is that it again appears that older, rather than younger, participants show the strongest connections between forgiveness and trauma, with older women showing the strongest associations across groups. This confirms our expectations. However, a word of caution is due here, because sample sizes vary quite dramatically in Table 4, ranging from just under 10 to almost 30. Nonetheless, older women in this sample demonstrated a strong inverse relationship between forgiveness and trauma.

Hierarchical Regression Analyses

Results of the hierarchical regression analyses are shown in Table 5. Model 1 estimates the effects of pretrauma variables and shows that neither age nor gender are significantly related to posttraumatic stress. Model 2 estimates the effect of trauma exposure on posttraumatic stress net of age and gender. Its association with posttraumatic stress approaches statistical significance. Model 3 adds the effects of forgiving affect, behavior, and cognition to the equation. Results suggest that the inverse relationship between forgiving behavior and posttraumatic stress approaches statistical significance. Model 4 adds the seven necessary two-way interactions to the model. Inspecting these coefficients reveals that statistically significant two-way interactions exist for Age $\times$ Forgiving behavior and Age $\times$ Forgiving cognition. This confirms that the age differences in associations between forgiving behavior and cognition with posttraumatic stress in Table 3 are statistically significant. Older respondents, as compared with younger, show stronger connections between forgiveness and posttraumatic stress. The last model adds the three-way interaction terms. No statistically significant three-way interactions were observed. These findings indicate that although there seems to be important variation between older men and women, in terms of the associations between forgiveness and posttraumatic stress (see Table 4), there are no statistically meaningful differences in these relationships.

Discussion

In this study, we examined three key issues regarding trauma and forgiveness in the postconflict culture of Sierra Leone. First, we sought to understand the relationship between forgiveness and trauma. Second, we aimed to examine the role of gender and age in levels of experienced trauma and forgiveness. Third, we exam-

Table 1
Associations Between Trauma Exposure, Posttraumatic Stress, and Forgiveness

	Mean	*SD*	Forgiving affect	Forgiving behavior	Forgiving cognition	Forgiveness total	Trauma exposure
Forgiving affect	3.50	1.10					
Forgiving behavior	3.90	1.00	.44**				
Forgiving cognition	3.80	1.20	.50**	.78**			
Forgiving total	3.80	.93	.74**	.88**	.91**		
Trauma exposure	1.70	.20	.09	.08	.08	.10	
Traumatic stress	1.90	.50	.05	−.16	−.11	−.09	.25*

* $p < .05$. ** $p < .01$.

Table 2
Trauma Exposure, Posttraumatic Stress, and Forgiveness by Gender and by Age

	Male ($N = 29$)		Female ($N = 24$)		
	Mean	*SD*	Mean	*SD*	F
Forgiving affect	3.6	1.31	3.5	1.01	0.11
Forgiving behavior	3.77	1.21	4.18	0.68	2.14
Forgiving cognition	3.55	1.29	4.14	1.03	3.31^{+}
Total forgiveness	2.6	7.6	1.5	2.4	1.24
Trauma exposure	13	7.49	10.34	5	2.41
Traumatic stress	1.8	0.54	2.01	0.57	2.08
	Age 20–29 ($N = 31$)		Age 30–60 ($N = 22$)		
	Mean	*SD*	Mean	*SD*	F
Forgiving affect	3.45	1.15	3.82	0.82	1.55
Forgiving behavior	3.79	1.05	4.28	0.86	3.08^{+}
Forgiving cognition	3.71	1.26	4.14	0.99	1.75
Total forgiveness	3.64	0.95	4.06	0.72	3.11^{+}
Trauma exposure	12.83	6.76	11.29	6.29	0.78
Traumatic stress	2.07	0.55	1.75	0.47	5.14*

$^{+}p < .10$. $^{*}p < .05$.

ined how gender and age might influence the relationship between trauma and forgiveness.

Initially, it appeared that forgiveness and trauma were unrelated, and our primary hypothesis appeared to be disconfirmed. However, upon examining gender and age, a different picture emerged. Regarding levels of trauma and forgiveness, both gender and age played an important role. Trauma exposure and posttraumatic stress did not differ across gender, but age did have an effect. Younger respondents reported greater symptom severity (but not degree of exposure) than older respondents. Regarding forgiveness, older participants reported higher levels of forgiving behaviors and total forgiveness than younger participants. As expected, forgiveness was more strongly connected to traumatic stress for older than for younger participants. When we cross-classified by both gender and age it appeared that older women showed the strongest relation between forgiveness and traumatic symptom severity as compared with all other demographic groups. However, multiple regression analyses did not bear out this variation first observed in descriptive analyses.

Previous literature has demonstrated that older participants and women are more likely to experience higher levels of forgiveness (Miller et al., 2008; Toussaint et al., 2001). In our sample, older participants showed lower levels of posttraumatic symptom severity overall, which was negatively related to all three forgiveness variables. This suggests that there may be a unique relationship between posttraumatic stress and likelihood of forgiveness in older participants. We expected that, given the prevalence of violence against women during the war and previous findings on increased

Table 3
Associations of Trauma Exposure, Posttraumatic Stress, and Forgiveness by Gender and Age

	Men ($N = 29$)		Women ($N = 24$)	
	Exposure	Stress	Exposure	Stress
Forgiving affect	0.01	−0.10	0.23	0.31
Forgiving behavior	0.22	−.32^{+}	−0.08	−0.10
Forgiving cognition	0.14	−.35^{+}	0.13	0.03
Total forgiveness	0.14	−0.29	0.16	0.09
	Age 20–29 ($N = 31$)		Age 30–60 ($N = 22$)	
	Exposure	Stress	Exposure	Stress
Forgiving affect	0.02	0.22	−0.15	−.42^{+}
Forgiving behavior	0.02	0.03	0.14	−.69***
Forgiving cognition	0.05	0.02	0.01	−.49*
Total forgiveness	0.05	0.09	0.02	−.63**

$^{+}p < .10$. $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Table 4
Gender by Age Classifications of Associations Between Trauma Exposure and Posttraumatic Stress With Forgiveness

	Men		Women	
	Exposure	Stress	Exposure	Stress
Age 20–29				
Forgiving affect	−.16	−.22	.37	.51*
Forgiving behavior	.20	.03	.15	.14
Forgiving cognition	.16	−.21	.15	.15
Total forgiveness	.08	−.14	.32	.33
Age 30–60				
Forgiving affect	−.26	−.34	−.39	−.86**
Forgiving behavior	.34	−.63*	−.63	−.85**
Forgiving cognition	.05	−.52^{+}	.07	−.46
Total forgiveness	.07	−.60*	−.23	−.76*

Note. Samples sizes are $N = 15$ age 20–29 males; $N = 16$ age 20–29 females; $N = 14$ age 30–60 males; and $N = 8$ age 30–60 females. Visual inspection of bivariate scatter plots and regression diagnostics revealed no influential data points biasing the results in these small subsamples.
$^{+}p < .10$. $^{*}p < .05$. $^{**}p < .01$.

Table 5
Hierarchical Regression Models Predicting Posttraumatic Stress From Pre-, Peri-, and Post-trauma Variables (Unstandardized Coefficients)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Pretrauma					
Gender	.00	.08	.19	−.39	.42
Age	−.01	−.01	.00	.10^{+}	.12
Peritrauma					
Trauma exposure		.02^{+}	.03*	.02*	.03*
Posttrauma					
Forgiving affect			.08	.08	.17
Forgiving behavior			−.19^{+}	1.39*	3.23*
Forgiving cognition			.00	−1.35*	−3.05^{+}
2-Way interactions					
Gender × age				−.02	−.03
Gender × Forgiving affect				.13	.22
Gender × Forgiving behavior				−.17	−1.47
Gender × Forgiving cognition				.30	1.34
Age × Forgiving affect				−.05	.00
Age × Forgiving behavior				−.04***	−.10*
Age × Forgiving cognition				.03*	.08
3-Way interactions					
Gender × Age × Forgiving affect					−.01
Gender × Age × Forgiving Behavior					.04
Gender × Age × Forgiving cognition					−.03

$^{+}p < .10$. $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

levels of posttraumatic stress in women following exposure (Rapaport, 2004; North et al., 1999; Tolin & Foa, 2006), women would report more exposure to trauma and symptom severity overall. Contrary to expectations, no significant differences emerged between men and women on these variables. When older women reported higher levels of posttraumatic stress, forgiveness was the least likely across groups, though this finding was not validated by regression analyses.

The lack of significant differences on trauma exposure and symptom severity in the current sample may be explained by the particularly brutal nature of the civil war and the harsh conditions of Sierra Leone. The fact that trauma was experienced and witnessed on a regular basis may also play a role. Witnessing trauma may have had a comparable effect on the victim and anyone else who was present, given that trauma exposure is conceptualized as either experiencing or witnessing an adverse event (Spitzer, 2007). Additionally, the frequent trauma exposure and variety of traumatic experiences that occurred during the war are better characterized as complex, rather than acute, trauma. Complex trauma refers to the experience of multiple and/or chronic adverse experiences and traumatic events (Cook et al., 2003). Less is known about gender differences in complex trauma, but more severe outcomes and poorer overall functioning have been demonstrated (Cook et al., 2003; Perry, 2008). Furthermore, the residents of Sierra Leone are vulnerable to increased levels of distress overall, as exposure to trauma typically has a more devastating impact in developing nations as compared to more industrialized areas (U.S. Department of Veterans Affairs, 2010).

Overall, the data suggest that traumatic stress symptom severity is associated with likelihood of forgiveness for some demographic groups. This effect was not present in young men, mildly present in young women, and the most pronounced for older participants. The strongest associations between trauma severity and forgiveness occurred in the older group. The fact that increased trauma led to more forgiveness in younger women and less forgiveness in older women is interesting and should be further explored in future studies. Given previously demonstrated associations between the ability to forgive one's perpetrators and decreased levels of posttraumatic stress (Friedberg et al., 2005; Peddle, 2007; Stein et al., 2008), it is critical to understand the variables that facilitate and hinder forgiveness processes. Our results suggest that sociodemographic variables may play an important role in understanding trauma and the role of forgiveness in the healing process. Trauma severity may predict one's ability to forgive in the aftermath of trauma, which has implications for mental health outcomes, though further research is needed to elucidate the direction of this relationship. Interventions that incorporate the practice of forgiveness should consider the role gender and especially age may play in its effectiveness. Such interventions, for example, may be poorly suited to older adults, with other components of healing proving more effective in this group.

There are several limitations of the current study. The sample was recruited through universities and was primarily well-educated, employed, and reported few economic problems. Hence, it does not represent the Sierra Leonean population at large. Given the challenges associated with conducting research outside of the United States, we made every effort to collect as much data as possible. Data were collected only from participants who chose to receive counseling and who were proficient in English. Attempting to collect additional data through community outreach would have been problematic given safety concerns for our staff and language barriers. Although the university sample remains a limitation, the traumas reported by these participants were comparable to the traumas known to have occurred during and after the war. We also did not assess for other types of symptomatology the participants may have experienced during or immediately after trauma expo-

sure, leaving us unable to discern if psychiatric problems beyond PTSD may have played a role. We also cannot evaluate the potential effects of any culture-specific psychological effects that may have been present in the sample. Although the PTSD construct itself may be limited in this population, the authors are not aware of a culture-bound syndrome that would have explained the participants' expressed symptoms better than PTSD. Additionally, splitting the sample by gender and age created comparison groups with small sample sizes. Including trend-level data was meant to adjust for the decrease in sample size, but it is possible that type-II statistical errors still occurred. A larger sample may have revealed additional relationships. Finally, respondents voluntarily participated in the therapeutic workshop, which may reflect a self-selecting, treatment-seeking sample. Individuals open to discussing their experience are more likely to participate, and we may have missed data from individuals with more severe trauma or who felt uncomfortable sharing their experiences in a therapeutic group setting.

The authors also want to address the unique role of forgiveness in Sierra Leone, particularly following the brutality of the civil war. The Truth and Reconciliation Commission (TRC, 2004) was created with the mission of encouraging and facilitating forgiveness in Sierra Leone following the war. Forgiveness appeared to be a critical component of the postwar recovery process, and may have even been seen as a government expectation (Chapman, 2007; Stein et al., 2008). Given this pressure to forgive, we cannot rule out the possibility that the participants in our sample may have been responding in socially desirable ways. Although efforts were made to build rapport during the clinical outreach work, we cannot assess the level of trust participants' felt toward the outreach workers or the data collection process and are unable to know how the cultural expectation to forgive may have impacted our results.

The current study reveals interesting relationships among gender, age, trauma, and forgiveness in a post-conflict Sierra Leonean population. Further research is needed to replicate and refine these results, in order to increase the generalizability of these findings. Additional research may yield insights into the role sociodemographic variables can play in treatment programs geared toward symptom amelioration or resilience building. Such programs have the potential to be disseminated into universities like the one utilized in the present study. Applying research findings in conjunction with the involvement of local psychologists has the potential to lead to the development of culturally informed assessment and treatment options. The authors are currently undertaking similar research projects in other countries with exposure to trauma, as part of their continuing outreach efforts with the ATOP of Meaningfulworld.

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